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ARNOLD ARBORETUM
HARVARD UNIVERSITY

BULLETIN
OF POPULAR INFORMATION

SERIES 4. VOLUME I

1933



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JANUARY 15, 1933

NUMBERS 1 & 2

TRUMPET-CREEPERS. THERE are three parts of the world where Trumpet-creepers grow in abundance. In the central and southern United States, the American Trumpet Creeper is one of the commonest sights of early summer. It carpets the rocky embankments of railroads and highways; it runs up fence posts, launching its orange-red flowers well out into the light and air; in the edge of rich floodplain woods it grows rampantly and climbs to the tops of trees and bushes. On the plains of Texas it is dwarfed, often growing without any support, more like an unkempt shrub than a true vine. Like the American robin, it rejoices in civilization and is probably a more common species today than it was before the country was first settled. It takes to fence rows like a song sparrow. In many parts of the South it has actually become a weed in plowed fields. The storage roots remain far underground, too deep for an ordinary plow. Whenever the top is cut back the roots send up a new crop of branches and so the plants manage to hold their own year after year though they may seldom or never flower.

Halfway around the world the Chinese Trumpet Creeper is found in very similar situations, so much so that its original home does not seem to be known, though it was very probably central China. It is today a common ornamental vine in Chinese towns and villages, occasionally becoming a weed, as does its American cousin. It is a vine or semi-shrub, running up to six or eight feet in height. In the semi-tropical climate of southern China its main flowering period is in early summer and it then blossoms intermittently, a few flowers at a time, during the rest of the season.

The third region in which Trumpet-creepers are common is southern Massachusetts, particularly in the neighborhood of Cape Cod. The

vines which grow there are for the most part hybrids between the American and Chinese species. Most appropriately for man-made varieties they do not take to fields and woodlands as did their wild progenitors, though they make themselves very much at home in the situations where they have been planted. They climb over houses, barns, outbuildings, and garden fences, in complete abandon, their orange-red flowers harmonizing well with the silvery gray of the weathered shingles.

It does not seem to be at all generally realized that these Trumpet-vines of our Massachusetts gardens are not the true American species, but are of hybrid origin. Were it not for the several striking characteristics by which the two species differ it might be difficult, if not impossible, to distinguish in every case between the two species and their hybrid derivatives. The outstanding differences between the species are shown in the accompanying plate. They may be summarized as follows:

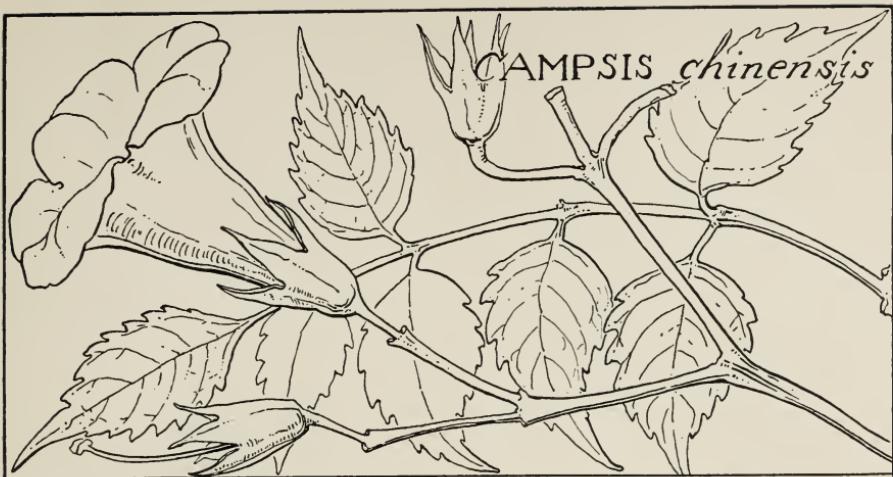
AMERICAN TRUMPET-CREEPER
(*Campsis radicans* Seem.)

Leaves hairy beneath, along the veins
Flower tubular
Sepals relatively short
Petal lobes small
Flowers usually orange-red
Flower cluster compact
Aerial roots common
Vines up to thirty feet long

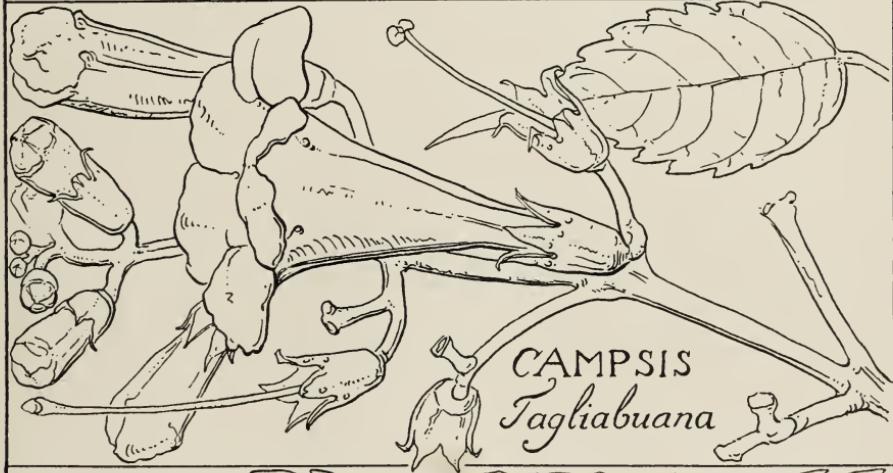
CHINESE TRUMPET-CREEPER
(*Campsis chinensis* Voss.)

Leaves smooth beneath
Flower bell-shaped
Sepals relatively long
Petal lobes large
Flowers usually scarlet-red
Flower cluster open
Aerial roots rare
Vines up to ten feet long

The immediate hybrids, those of the so-called first hybrid generation, are intermediate in all these characteristics as is shown in Plate 1. Their seedlings are a variable lot and include many which superficially resemble one parent or the other. The two species differ in their hardiness, or at least their cultivated representatives do so. *Campsis radicans* is completely hardy in the Arboretum but although plants of *C. chinensis* have been grown, and for that matter have flowered, they have eventually died out during cold winters. At Flushing, Long Island, in the old Parson's Nursery there was for many years a large specimen of the Chinese species which received no winter protection in its later years. As in the case of Magnolias and many other woody plants, well established specimens seem to be hardier than young seedlings.



CAMPSIS chinensis



CAMPSIS
Tagliabuana



CAMPSIS
radicans

19-32

Though many of our Massachusetts vines are garden varieties of hybrid origin, little seems to be known as to where they were produced or by whom. They probably came into being in a number of places, as the two species cross readily and are often grown from seed. Both species have been in cultivation in European gardens for over a century and there have been many opportunities for the production of hybrids. The American species has been in cultivation in England since at least 1640; the Chinese species was introduced in 1800. They are not often cultivated in northern Europe since the climate is a little too cool, but in southern France and in Italy they are common features of parks and gardens. Whether the first hybrids were intentional or merely a happy accident we cannot say. It is quite possible they may have been an accident, if the experiments made some years ago at the Botanical Garden in Washington are at all representative. Noticing that both species then in flower in the garden were being repeatedly visited by humming birds, W. R. Smith collected the seeds which set naturally on the vines and raised a number of seedlings. All of them were hybrids, brought about by the cross-pollinating agencies of bees and humming birds.

The first published reference to the hybrids was in 1859 when an Italian botanist, Roberto de Visiani, described them and differentiated them from the parental species. He gave the hybrids the name *Tecoma Tagliabuana* in honor of the brothers Tagliabue, "de horticultura italica optime meritis, et a quibus novam ignotaeque originis plantam acceptem refero," to quote from the original dedication.

The hybrids are nearly as fertile as the parental species and from them have sprung a host of secondary hybrids, grandchildren of the original cross and back-crosses to the American and Chinese species. They combine the characteristics of the two species in various ways and are common in cultivation, though most of them masquerade in nursery catalogues as varieties of the American Trumpet creeper. Such, for instance, is the "*Bignonia radicans grandiflora atropurpurea*" of catalogues and horticultural literature. When carefully examined the influence of *C. chinensis* can be seen in the longer sepals and in the more open flower clusters. Only one of the hybrids in the Arboretum collection is really outstanding, the named variety, "Mme. Galen". It comes very near to uniting the best qualities of both species. Like the American Trumpet creeper, it is hardy in New England. Like the Chinese species, it has large and flaring flowers; like that species, too, is its flower cluster with the brilliant flowers set well apart so that

they show to best advantage. While it is occasionally seen in eastern gardens it is almost unknown in the middle West, where Trumpet-creepers grow unusually well. It is a splendid ornamental vine and is deserving of far wider recognition in American gardens.

In planting Trumpet-creepers it should be remembered that they are a little slow in establishing themselves; they should not be placed where they will have to compete with more vigorous vines or shrubs during the first few years. Once they are well established they have amazing vigor and will profit by heavy pruning, especially so if a good showing of flowers is desired. The vines bloom on wood of the current season's growth and for that reason one does not sacrifice even one season of blossom by cutting them back severely. They sometimes sucker freely from the widespread roots and may become troublesome unless they are kept within bounds. Trumpet-creepers show to their best advantage in a garden if they are trained to a post and are headed back even with the top of the post every spring. Treated in this manner they throw out a thicket of young branches each year, which becomes a brilliant bouquet of flowers during the middle of the summer. In the right setting a row of such pillars would be very effective in a formal garden.

Trumpet-creepers are easily propagated. They grow well from seed, though the seedlings resent shifting about and should be kept as long as possible in the same pot. Desirable varieties such as "Mme Galen" can be propagated either from hardwood cuttings or by top-grafting on to large plants of the commoner varieties.

NOMENCLATORIAL NOTE

THE TRUMPET-CREEPERS have had the misfortune to be classified under three genera, *Bignonia*, *Tecoma*, and *Campsis*. For technical reasons the Arboretum prefers the latter name, though many botanists still use *Tecoma*. *Tecoma radicans* Juss., and *Campsis radicans* Seem., are different names for the same species, the American Trumpet- creeper. The Chinese species is known as *Tecoma grandiflora* Loisel, or *Campsis chineensis* Voss. The hybrid is called *Tecoma Tagliabuana* Vis., *Tecoma hybrida* Jouin, as well as *Campsis Tagliabuana* (Vis.) Rehd., the name preferred by the Arnold Arboretum.

EDGAR ANDERSON

THE RIVER BIRCH, (*Betula nigra*). ALTHOUGH it is one of our commoner American trees, common at least in terms of the total number of individuals and of its wide natural distribution, the River Birch is almost unknown to the general public. Though flourishing under cultivation, it has been so seldom planted that its remarkable hardiness and adaptability to adverse conditions, even in smoky cities, have passed unnoticed. This is probably due to the fact that the species grows naturally only along river banks and in the lowest parts of floodplains. Found only in such situations it is seldom seen except by hunters, fishermen, trappers, and those few naturalists who prowl through the dense thickets and tangled vines of floodplain woodlands. Nor could those who knew the tree in its native haunts have predicted how well it would behave under cultivation. For not only does it stand transplanting to higher and dryer ground, but it is very tolerant as to soil conditions and has a resistance to smoke injury scarcely equalled by any other American tree.

Fortunately, in a few places the River Birch has been brought into cultivation. Seed for the Arnold Arboretum plantations was collected at Lowell, Massachusetts, in 1877. The resulting seedlings have grown into a fine group of trees. The largest of these trees is over three feet in diameter at the base and sixty feet in height. Though nearby White Birches and other species have been badly infested with borers and with blight, the River Birches have been practically unharmed.

Along the Metropolitan Speedway, on the banks of the Charles River, there is a beautiful row of River Birches nearly a quarter of a mile in length. The situation is a difficult one for any tree. Before the construction of the Charles River Basin, that part of Boston was a salt marsh, and the subsoil is still so salty that Elms and Swamp Maples cannot be grown there. By a happy inspiration the Park Commissioners about twenty years ago tried out the River Birch with most satisfactory results, both as to the hardiness of the trees and the landscape effect. The trees are thickly planted, and today they are about twenty or twenty-five feet in height and one to two feet in diameter. They are thrifty and do not appear to have been in any degree retarded by the salt.

In St. Louis, Missouri, one of the smokiest cities in the United States, the River Birch grows luxuriantly in the Botanical Garden and in the city parks, in situations too smoky for most of our native trees.

The River Birch is widely distributed in the eastern and central United States, and in many places, especially in the southwestern part of its range, it is the only native species of Birch. It occupies a belt

mainly south of that of the White or Paper Birch, although the two overlap in New England and across the northern part of the United States. It grows naturally from New Hampshire to central Florida, and westward to eastern Nebraska and to the Brazos River in Texas. In New Hampshire and Massachusetts it is confined to the drainage basins of a few of the larger rivers, and it does not again occur north of Long Island. It is also absent from most of the Allegheny Mountain region.

In the middle states the River Birch often becomes a large tree, up to eighty or ninety feet in height, and with a trunk diameter at the base of five or six feet. But it is usually much smaller, and it sometimes only attains the size of a small shrub when growing in thickets, especially towards the northwestern limits of its range. Trees seen in cultivation sometimes have a single, erect, trunk and a rounded but irregular crown, but the trunk is more often deflexed, and in a wild state it is commonly divided a few feet above the base into several stout, divergent branches, which ramify into many spreading branches, terminated by slender, pendulous branchlets. The trunk and larger branches are covered with a loose or ragged papery bark, of a silvery gray color, marked with short, horizontal dark lines. This gradually scales off, revealing the pale, pinkish inner bark on the upper branches. The striking and picturesque appearance of the trees is largely due to this characteristic bark as well as to the graceful, drooping branchlets.

The rhombic or ovate leaves, about one and a half to two inches long and one to two inches broad, are feather-veined, with double-serrate margins, and sometimes with several pairs of short triangular lobes. When they first appear, rather late in spring, they are gray and silky, and they remain on the branches until late in the autumn, when they become bright yellow. The staminate catkins are formed in the autumn and remain dormant through the winter in clusters of two or three at the ends of the branchlets. They are slender, cylindrical, an inch or less in length, and of a chestnut-brown color. The pistillate catkins are shorter and stouter and appear in spring, remaining on until the seeds are matured in late summer.

The Latin name, *Betula nigra*, signifying Black Birch, is rather misleading, as another species, *Betula lenta*, is sometimes known as the Black Birch. Furthermore the name River Birch, which seems most appropriate is the most widely known. *Betula nigra* is called Red Birch in some sections of the country.

Growing on the immediate banks of streams, the River Birch frequently overhangs the water, on the surface of which it may be reflected, and the silhouette of its shaggy trunk and graceful branches seen in the open vistas of the river often adds a striking touch of beauty to the landscape, and suggests the possibility of similar effects for planting along the margins of ponds or lakes.

Though the River Birch may be too ragged and unsymmetrical for general planting along streets and avenues, it should not remain neglected and unknown. For as Michaux observes in his *North America Sylva*, "If the good properties of the Birch are not brilliant, they are at least numerous and useful".

EDGAR ANDERSON
ERNEST J. PALMER

EXPLANATION OF PLATES

Plate 1, page 3.

Campsis Tagliabuana, Campsis radicans and Campsis chinensis.

(Drawing by Blanche Ames Ames.)

Insert Plate.

Campsis Tagliabuana var. Mme. Galen.

(Drawing by Blanche Ames Ames.)

CAMPsis Tagliabuana

var. Mme. Galen

N.B.
1932



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MARCH 15, 1933

NUMBER 3

LICHENS. For those whose interest extends to the lichens which grow on the trunks and branches of trees, this issue of the Bulletin has been prepared. There are probably about fifty different kinds of lichens to be found growing on Massachusetts trees. Consequently the notes here presented make no pretense to completeness, but it is believed that they cover the commoner species.

Lichens were long thought to be "individuals" in the plant kingdom after the manner of mosses, fungi, and the higher plants. But with the development of the microscope and the resulting investigation of minute structures they have proven to be dual beings consisting of algae and fungi growing together in a curious interrelationship apparently for mutual benefit. The present tendency is to maintain them as a separate group.

Most lichens are so constructed that they are largely independent of the soil as a source of water and nutrient salts. They absorb moisture, whether it be in the form of rain, mist, or water vapor, with extraordinary ease and rapidity from the air or from the surface upon which they live, so that from a tinder-dry quiescent state in which they barely exist they may become turgid and active almost instantly under the influence of a light rain. Along with water they absorb large quantities of carbon dioxide from the air, and both are utilized by the green or blue-green algal constituents in the manufacture of the starchy materials upon which the whole plant lives. So far as is known reproduction is nearly always vegetative, by spores or by the breaking off of portions of the lichen plant or thallus to form new colonies.

Unless they lie flat on rocks or soil, lichens are held closely to their substrata by minute threads or rhizoids which penetrate small inter-

stices of bark or wood. Some species are so thin and permeate the bark so completely as almost to appear part of it. It would seem then – and such proves to be the case – that large foliose species should be expected upon trees with deeply fissured bark to which their comparatively large rhizoids can cling, while crustose forms which actually penetrate the outer surfaces of the cork might be found most commonly on smooth-barked trees. Another factor beside the necessity for a holdfast must be considered, however. Trees whose bark is much broken by cracks and crevices hold much more water on their surfaces than smooth-barked ones, and so offer a distinct attraction for plants which are forced to utilize atmospheric moisture. Due in part to long periods of inactivity in dry weather, and in part, probably, to inherent qualities of the plants themselves, lichen growth is extremely slow. Some of the common foliose species will add a quarter of an inch to their diameter in one year, while others have been observed over periods covering fully twenty-five years without showing perceptible increase in size. In many trees the bark changes from a smooth to fissured condition with age so that there is a progression of lichen species whose requirements differ. The fact that most of the lichens are usually found on the lower ten to twenty feet of a tree is probably due not only to more suitable atmospheric conditions near the ground but also to the presence higher up of the younger, less fissured bark which offers less purchase for holdfasts and less surface moisture.

Whatever the lichens may take from the bark itself is not known to do any damage to the trees, although it should be noted that they are most abundant on trees which are not in a healthy condition.

That lichens are sensitive to minute differences in the content of the atmosphere is shown by the common observation that they are almost entirely absent from the neighborhood of large cities. This seems to be due in part to the presence of coal smoke with its accompanying gases which have been found harmful even in small quantities.

Certain lichens have been "known" from time immemorial to have medicinal properties. A few such as the Iceland Moss, *Cetraria islandica*, are still in use. Some species contain purple, yellow, and green pigments which are easily extracted to make good dyestuffs. Lichens attain their greatest importance to man, however, in the treeless arctic and subarctic parts of the globe where fruiticose or "bunch" lichens, known as "reindeer mosses", cover large areas to make natural forage for vast herds of reindeer and caribou.

HUGH M. RAUP



a



b



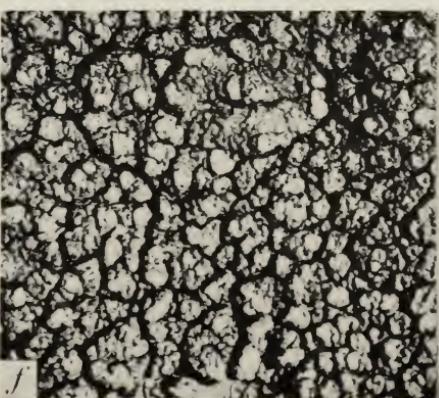
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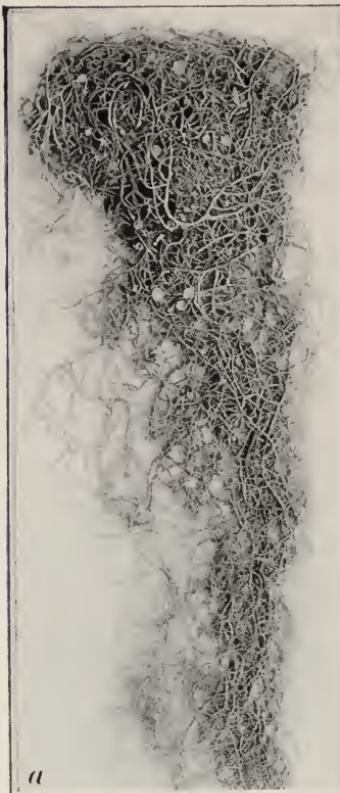


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PLATE I



a



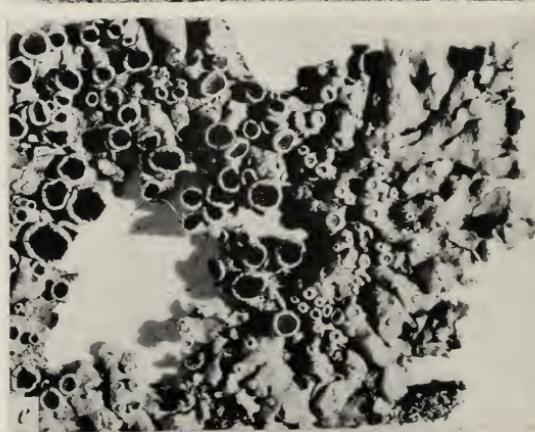
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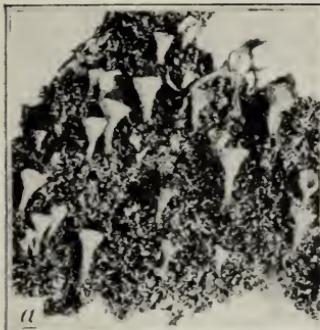


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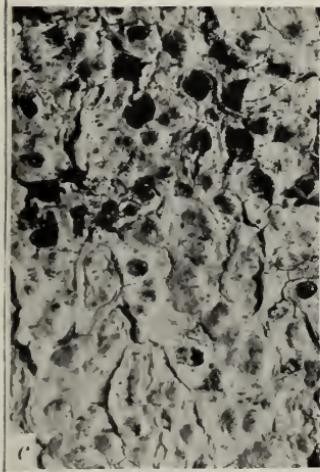


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PLATE II



a



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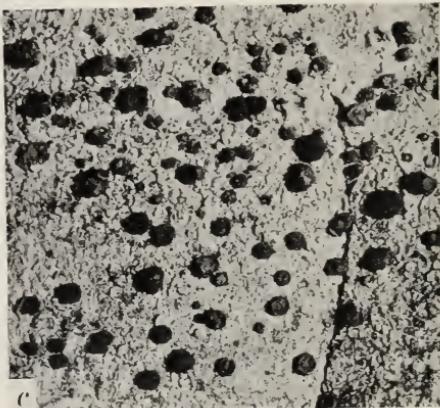
PLATE III



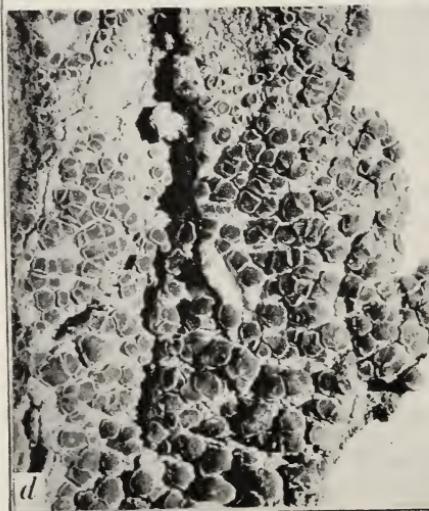
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d



e

PLATE IV

EXPLANATION OF THE PLATES

PLATE I.

- a. *RAMALINA CALICARIS* (*L.*) *Rohl.* Nat. size. Usually on rough bark. Color gray or pale green.
- b. *USNEA DASYPOGA* *Rohl.* Nat. size. Usually found on old rough-barked trees. Color gray to pale green.
- c. *OPEGRAPHA VARIA* *Pers.* x4. Forms a thin whitish crust on smooth bark. Fructifications black.
- d. *GRAPHIS SCRIPTA* (*L.*) *Ach.* x3. Thallus a thin white or grayish crust on smooth bark. Fructifications black.
- e. *LECANORA SUBFUSCA* (*L.*) *Ach.* x4. Thallus a rather thick, fissured crust on rough or smooth bark, gray or pale green. Fructifications brown or black, with margins colored like the thallus.
- f. *PERTUSARIA VELATA* (*Turn.*) *Nyl.* x4. Thallus thin, or in age thick and fissured, whitish or pale green. The fructifications are in the shallow, lighter-colored, and often powdery depressions.

PLATE II.

- a. *USNEA TRICHODEA* *Ach.* Nat. size. Forms pale green festoons on branches, usually on old trees. The small disks are the spore-bearing organs.
- b. The same. x4.
- c. *PARMELIA CAPERATA* (*L.*) *Ach.* Nat. size. Very common on rough-barked trees. Upper surface straw-colored, usually paler toward the margin; lower surface black, with black rhizoids. Fructifications (not appearing on this specimen) reddish-brown disks with pale rims, much like those of the following.
- d. *PARMELIA SAXATILIS* (*L.*) *Ach.* Nat. size. Usually on rough bark. Upper surface gray or pale green; lower surface and rhizoids black. Fructifications reddish-brown with pale rims.
- e. *PHYSCKIA STELLARIS* (*L.*) *Nyl.* x3. Usually on rough bark. Gray to pale green, with white under surface and rhizoids. Fructifications with dark brown or black disks.

PLATE III.

- a. *CLADONIA PYXIDATA* (*L.*) *Hoffm.* Nat. size. Common on the mossy bases of tree trunks. Thallus of many small lobes which are pale green or darker above and white beneath; the cups are usually pale green, sometimes with small dark brown spore-bearing organs on their rims.
- b. *ALECTORIA CHALYBEIFORMIS* (*L.*) *Rohl.* x3. Branches usually stiff, dark brown, and rather shiny. The small white bodies on them are vegetative reproductive organs, or *soredia*.
- c. *PYRENULA NITIDA* (*Weig.*) *Ach.* x4. The thallus, usually on smooth bark, is a gray to pale green crust. Fructifications black.
- d. *CETRARIA PINASTRI* (*Scop.*) *Rohl.* x3. Usually on rough bark. Thallus lobes green or straw-colored above, with the yellow under surface often rolled up at the edge, so that the lobes appear to have yellow borders.
- e. *RHINODINA SOPHODES* (*Ach.*) *Mass.* x4. On smooth or rough bark. Thallus a thin, gray to brown, granular crust. Fructifications dark brown or black, with margins colored like the thallus.
- f. *XANTHORIA PARIETINA* (*L.*) *Bertram.* x3. The whole plant orange-colored.

PLATE IV.

- a. *LOBARIA PULMONARIA* (*L.*) *Hoffm.* Nat. size. Usually on damp bark in rich woods. Grayish or yellowish green, with reddish-brown fructifications.
- b. *EVERNIA PRUNASTRI* (*L.*) *Ach.* Nat. size. Pale gray-green or straw-colored, usually on rough bark. Rarely found with fruit.
- c. *BUELLIA DISCIFORMIS* *Mudd.* x4. Thallus a gray or gray-green crust on smooth bark. Fructifications black.
- d. *CALOPLACA AURANTIACA* *Th. Fr.* x3. Thallus a yellowish to gray or whitish crust on rough or smooth bark. Fructifications orange to saffron, with paler rims.
- e. *CALICUM LENTICULARE* *Fr.* x4. Thallus a thin white or gray crust, often not evident. The black or dark brown spore-bearing organs are on the slender black stipes. Usually on dead wood.

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NUMBER 4

SHUBS ATTRACTIVE IN LATE WINTER AND EARLY SPRING. FEW, indeed, are the shrubs which are as attractive the first week in March as they were at Christmas time. As cold waves come and go, berries shrivel and lose their color, leaves reputedly evergreen turn brown and wither, or drop off altogether. Of all the shrubs planted for their winter effect only two classes hold their own as winter advances towards early spring: those few species which flower in the winter and secondly those such as the willows and osiers whose winter interest is due to the color of the young twigs. These actually brighten as spring approaches and by the first week of March even the bare branches of the Forsythia bushes lend a distinctly yellow tone to the landscape.

The great bulk of shrubs which at one time or another have been recommended for their winter effect owe that recommendation either to evergreen leaves or attractive fruits. A few of these species do not properly belong on any such list, as far as New England is concerned, since they lose their beauty with the first killing frost. The great majority cease to be effective after a severe cold wave. By early March only a few are left with unblemished reputations. The following list was made on March 13, 1933. It does not pretend to be complete though an attempt has been made to include all the outstanding "winter shrubs" in the collections of the Arboretum. It is an attempt to give a vigorous spring house cleaning to the list of berried and evergreen shrubs. Too much weight should not be given to this single rating, however. No two winters are alike and while that of 1932-33 may be taken as near the average, many of the shrubs on these lists would behave differently in another winter, or if planted in a different position.

The author will be glad to hear from any readers of the Bulletin whose experience with any of these shrubs does not agree with the rating on the present lists.

SUBRUBS WITH ATTRACTIVE FRUITS.

Rosa Helenae. Fruits practically uninjured, very attractive.

Rosa multiflora. Fruits attractive but not quite so effective as *R. Helenae*.

Rosa canina. Fruits attractive, a few discolored.

Aronia. Fruits badly withered, particularly the varieties with red fruits. Varieties with black fruits not unattractive.

Viburnum Wrightii. Fruits withered but a clear dark red.

Viburnum Wrightii var. *Hessei*. Like *V. Wrightii* but the fruits slightly more conspicuous.

Viburnum Sargentii. Fruits very badly faded, color practically gone.

Viburnum Sargentii var. *calvescens*. Fruits very badly faded, color practically gone.

Viburnum trilobum. Fruits very badly faded, color practically gone.

Crataegus. Fruits all fallen.

Berberis vulgaris. Fruits withered but attractive.

Berberis Thunbergii. Fruits bright and attractive, partly fallen.

Ribes fasciculatum var. *chinense*. Fruits slightly faded, but persistent and attractive.

The list of berried shrubs which were really effective by reason of the color of their berries can be reduced to three, the Multiflora Roses, the Chinese Currant, and *Viburnum Wrightii*. Many of the other rose species were more or less attractive; the wild European "Dog Rose", *Rosa canina*, had kept a goodly proportion of its bright fruits and many of them were still a clear and attractive red, but on *R. multiflora*, and to an even greater extent on the closely related species, *R. Helenae*, the fruits seemed quite as attractive as they had been in the fall. *Rosa Helenae* is a remarkable little rose worth growing for its flowers and foliage as well as for the persistent fruits. The flowers are such a pale pink in color as to be practically white; they are small, scarcely larger than one's thumb nail, but they are profusely borne in large corymbs. *Viburnum Wrightii* and its more dwarf variety *Hessei* are excellent shrubs and should be better known. Although it was introduced from Japan over forty years ago, *V. Wrightii* is not at all commonly grown. It has clean foliage, an attractive shape, and the abundant white flowers are followed by dark red fruits which contrast sharply with the black branches.

SHRUBS WITH EVERGREEN LEAVES.

Buxus sempervirens. Tips burned, leaves partly browned.

Buxus microphylla var. *koreana*. Leaves somewhat reddish in general tone, but not unsightly.

Buxus microphylla var. *japonica*. Leaves tinged with yellowish red.

Erythronium japonica. Leaves brown and yellow, unsightly.

Erythronium radicans var. *vegeta*. More or less browned, depending upon situation.

Erythronium radicans var. *Carrierei*. Leaves brownish green, not unattractive.

Erythronium radicans "Little Gem". Unsightly.

Erythronium radicans var. *minima*. Brown at tips of branches.

Erythronium radicans var. *pietra*. Some leaves fallen.

Ilex rugosa. Foliage undamaged. (Specimen low and probably entirely protected by the snow).

Ilex crenata var. *coccinea*. Attractive, an occasional yellow tip here and there.

Ilex yunnanensis. Ragged appearance, leaves partly fallen, others dark brown.

Ilex opaca. (All old, well established specimens) clear and attractive foliage.

Ilex glabra. In excellent condition, quite as beautiful as when it entered the winter.

Kalmia angustifolia. Leaves unharmed, attractive in color.

Kalmia latifolia. Leaves in good condition.

Leucothoë Catesbaei. An occasional leaf fallen, foliage attractive.

Berberis Julianae. Foliage attractive, purplish green and red, some leaves fallen but apparently no more than had fallen by Christmas time.

Berberis verruculosa. Foliage absolutely undamaged, upper sides of leaves a little darker than in the summertime, thereby contrasting effectively with the grayish green lower surfaces.

Berberis triacanthophora. Foliage red and green, attractive.

Mahonia repens. Foliage burned somewhat above the snow line, but in better condition than the next on the list.

Mahonia Aquifolium. Foliage badly burned in places, unsightly.

X *Mahoberberis Neuberti*. Branches practically bare.

Pachistima myrsinoides. Badly browned above the snow line.

Rhododendron hirsutum. Leaves unblemished.

Andromeda glaucophylla. Leaves dark purple-green above, a little ragged.

Rhododendron. (Many cultivated varieties). Foliage in excellent condition.

Arctostaphylos uva-ursi. Foliage dark red in places, but still attractive.

Vaccinium Vitis-idaea. Foliage attractive.

Pieris floribunda (*Ambromeda floribunda*). Leaves dark green, in excellent condition.

Hedera helix var. *baltica*. Some leaves purplish green, the younger growth browned in places.

Parthenocissus terminalis. Leaves somewhat yellow-green in general tone.

Cotoneaster salicifolia var. *flavescens*. A few leaves dropped, those remaining were an attractive purplish green.

Cotoneaster horizontalis. Berries dropped, leaves withered, some bushes unsightly.

Cotoneaster Franchetii. Some of the leaves discolored, berries unattractive.

Cotoneaster microphylla. Leaves all burned and unsightly.

Two of the shrubs on this list were so beautiful as to deserve more than passing mention. Our native Inkberry, *Ilex glabra*, whose merits were set forth year after year by Professor Sargent, is still not as well known as it should be. There is something almost like classical ornament in the refinement of its dark green leaves and graceful branches. A tour of the Arboretum's collections in late winter, as the above list bears witness, shows many scorched leaves and bare branches, but the Inkberry is quite as clear and clean and lustrous as when the winter began.

Among the newer introductions none were more attractive than *Berberis verruculosa*, a low, compact barberry from western China. The leaves are small and closely set, appearing somewhat like miniature holly leaves. They are a dark glossy green above, contrasting attractively with the dull gray green of the lower surfaces. One of the Arboretum's specimens, set on an exposed ledge below the Overlook had a most severe test but came through the winter unscathed.

EDGAR ANDERSON

HOW TO REACH THE ARNOLD ARBORETUM

The Arnold Arboretum covers over 260 acres and visitors will be saved needless inconvenience if they can find out before their visit, the approximate location of what they wish to see.

The main features of the Arboretum and their relation to the main automobile routes and the street car lines are shown, somewhat diagrammatically, on the accompanying map. The Administration Building [‘A’ on the map] houses the Library and Herbarium, while the Laboratories and Greenhouses [not open to the general public] are approximately half a mile away at ‘D’. Aside from the Magnolia collection, which is near the Administration Building, the showiest displays of spring and early summer are in the central part of the Arboretum. Most visitors are familiar with the shrub collection and the nearby lilaes, but many visitors miss altogether three of the most interesting collections in the Arboretum. These are 1, the Chinese plants on the Overlook, 2, the unusual shrubs along the Centre Street path [‘B’ on the map] and 3, the largest collection of flowering apples and pears at the base of Peter’s Hill [‘F’ on the map]. For visitors coming by automobile there is on week days at least, ample parking space near all the entrances and by studying the map one can find which entrance is nearest to the collections which are to be visited. The new four lane highway to Providence passes along one side of the Arboretum and the main route to Cape Cod goes along another side.

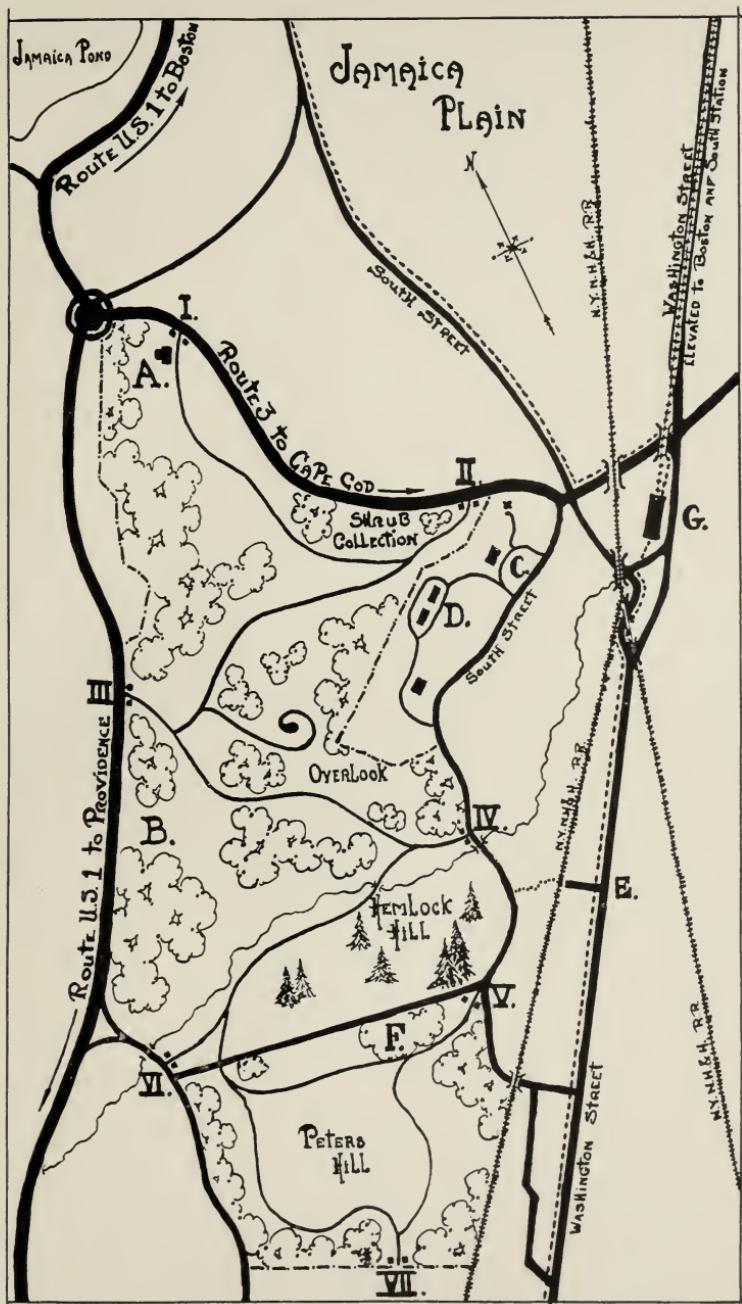
Visitors who come by way of the elevated system will be glad to learn that there is now a bus line running from Jamaica Plain along route No. 1 which goes directly past the Centre Street Gate [III] from which the most interesting parts of the Arboretum can be reached with a minimum of effort. Those coming by street car will find helpful the little-used path under the railroad at the base of Hemlock Hill. Surface cars can be taken along Washington Street and by getting off at Arboretum Road [‘E’ on the map] there is only a short block to walk.

EXPLANATION OF THE PLATE

— -- - street car lines

- A Administration Building, Arnold Arboretum
- B Centre Street Path
- C Bussey Institution
- D Greenhouses and Laboratory
- E Arboretum Road
- F Flowering Crabapples
- G Forest Hills Terminal, Boston Elevated

- I Jamaica Plain Entrance
- II Forest Hills Entrance
- III Centre Street Entrance
- IV South Street Entrance
- V Bussey Street Entrance
- VI Walter Street Entrance
- VII Fairview Street Entrance



ARNOLD ARBORETUM
HARVARD UNIVERSITY



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LEATHERWOOD (*Dirca palustris*). Not even the snow and rain of this year's tardy spring have discouraged the Leatherwood. Since late March it has been slowly creeping into flower, one blossom at a time, and now in mid-April is a beautiful sight. The graceful little flowers of waxy yellow-green hang in groups of three along the dark, zig-zag branches. Bud-scales and young leaves arch protectingly above the flower clusters, and if the bush as a whole is not very conspicuous, it has at least an unusual perfection of small detail and a general air of quality and finish.

Delicate though the flowers may be, the species is well deserving of its popular name as anyone will find who attempts to gather the flowering twigs without a sharp knife. The branches are surprisingly limber and the bark is tough and strong. One can actually tie the twigs in bow knots. If one attempts to snap off a branch quickly the wood itself may break and separate from the bark. It may even come away altogether, leaving the startled flower-gatherer with a perfectly bare twig in his hand and on the bush, dangling like an empty glove, the bark with its flowers and leaves still intact.

This remarkable fibrous bark has never been put to use in commercial quantities though it was known to the Indians and the early pioneers are said to have used it for cordage. Its various common names, Leatherwood, Thongwood, Thongbark, Wickopy and Ropewood, show that its peculiar qualities were at least well known if not extensively used.

Though seldom found growing in great abundance it is one of the most widely distributed American shrubs, for it is native from the Province of Quebec south to the Appalachicola River in Florida and west

as far as Missouri and Oklahoma. It grows in a variety of soils and under a diversity of conditions, though usually it avoids limestone. It is often found in the vicinity of water, so prevailingly so that one of its common names is Swampwood. In New England it prefers cool, damp woods; in Missouri and Indiana it is found most commonly on sandstone outcrops along creeks and rivers.

Its wide tolerance of different soils and situations should help to make it better known as a shrub for the small garden. It is not particularly conspicuous, to be sure, but it blossoms in the very early spring, and the flowering branches make dainty table decorations. The foliage is clear and clean looking and while the bush may not grow rapidly that very fact may be a point in its favor. A bush of Leatherwood will always stay in the picture and never get too large for the frame in which it has been planted. Only two points can be raised in its disfavor. The branches are so lax that on old specimens, such as those along the Lilac Path at the Arnold Arboretum, they will be bent down and cracked open by heavy snows. The other objection to the Leatherwood is that like many garden plants, the daffodil for instance, it contains a poisonous principle.

The poisonous qualities of the Leatherwood have not been extensively investigated. It is known that the bark and young fruits, taken internally are a violent purgative and that mashed up and made into a poultice they will even blister the skin. Leatherwood has sometimes been used as a medicine though it is not officially recognized as a drug plant. Little could be added today to the account which Dr. Bigelow published in his "Medical Botany" over a century ago and which the worthy Doctor concluded with the following comments, "I have introduced the *Dirca* in this place not so much because it has been yet applied to any medical purpose of great importance, but because it would be improper, in a work like the present, to pass over unnoticed a shrub of such decided activity".

— EDGAR ANDERSON

DIRCA palustris
(Leatherwood)



AB
1933

PLANTS OF CURRENT INTEREST. The closely related Eurasian genus, *Daphne*, is better known to gardeners than the American genus *Dirca*. Like the latter, it is made up of low, much-branched shrubs with tough, fibrous bark and a tendency to winter or spring flowering. *Daphne Cneorum*, which is being very much planted in American gardens, is only one of fifteen or twenty species which at one time or another have been in cultivation. For the most part they do not take kindly to New England. The old-fashioned Mezereum, scientifically known as *D. Mezereum*, is an outstanding exception to this generalization. It has even run wild in some parts of New England, and has this year done unusually well in the Arboretum where a large planting of it can be seen next to the collection of *Dirca palustris* on the Lilac drive. Gardeners who know only *D. Cneorum* may at first sight believe that there is some mistake in the label. Although the flowers resemble that species in being pink and fragrant, they are borne so differently on the branches that the plant is given quite a different aspect. While the flowers have as usual been more or less injured by the cold, wet weather, they have provided a show of bright color for nearly a month and have at all times been deliciously fragrant.

At the moment of writing (April 25) the Forsythias, Magnolias, and early flowering Cherries, which have been held back by the tardy season, are just coming into bloom. Unless there is a killing frost they should provide a fine display during the first week in May.

EDGAR ANDERSON

EXPLANATION OF THE PLATE

Dirca palustris, Natural size.

Fig. 1. Young flower, three times natural size.

Fig. 2. Mature flower, three times natural size.

(Drawing by Blanche Ames Ames.)

ARNOLD ARBORETUM
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PLANTS OF CURRENT INTEREST. PINK and white are now the prevailing colors at the Arboretum. The azaleas are not yet conspicuous but there is no lack of bloom, for the flowering cherries and crabapples are mounds of pink and white. Earlier in the month the finest show of cherry bloom was near the Forest Hills Entrance. Though this planting still shows color, the center of the stage now belongs to the later-flowering varieties which are seen at their best on the Overlook. It is unfortunate that more visitors to the Arboretum do not find this little orchard of cherry blossom which is situated on the plateau just below the summit of Bussey Hill. It can be reached quickly, though precipitously, by climbing up sharply to the right from the South Street Entrance. Many other interesting plants besides the cherries will be found there for the site has what the orchardists call "good air drainage". It has accordingly been chosen for choice but somewhat tender shrubs which might be injured by the colder night air of the valleys.

These late-flowering Japanese cherries are the results of generations of breeding and development. Many of the flowers are over two inches across; some are white, some pink, and some are even green. While the latter look somewhat grotesque on the tree, taken indoors and given the right background they make effective and beautiful cut flowers.

Botanically these late-flowering varieties are somewhat puzzling. There are many species of cherry growing wild in the Orient. Natural hybrids are not unknown and the whole situation has been complicated by the developments which have taken place under cultivation. Ever since 1822 when Samuel Brooks, an enterprising English nurseryman, began introducing them into western gardens botanists have been try-





ing to work out a satisfactory classification. The late Dr. E. H. Wilson straightened out some of the snarls in his "Cherries of Japan", but there are still many doubtful points.

One thing seems certain; many of the varieties are derived in whole or in part from a wild cherry of central Japan (*Prunus serrulata* var. *spontanea*) which is shown in detail in the accompanying plates. Other varieties are catalogued under the closely related species *Prunus Lannesiana*, which differs chiefly in having long, almost bristle-like, out-growths along the leaf margin, and in the fact that the leaves are reddish when unfolding. *Prunus Lannesiana* is not known to exist anywhere as a wild tree and it may be that there is really only one species, *P. serrulata*. Again it is quite possible that there are two species and that some of our varieties are hybrids. For the present the Arboretum continues, for convenience, to list part of the varieties (those with the more fragrant flowers and with the longer aristae on the leaves) under *P. Lannesiana* and the remainder under *P. serrulata*.

Faced by the frank admission of our ignorance, some laymen will be refreshed, many will be puzzled, a few actually annoyed. Those who have had real contact with scientific work will understand. Science is not static: its judgments change from day to day as new evidence comes to light. Even the naming of plants, apparently simple process though it might seem to be, partakes in this way of the nature of all scientific work. The father of American Botany, Asa Gray, put the matter in another way when he said that, "Species are but judgments". In other words they are the best estimates that botanists are able to make with the evidence which is at hand at this time.

The loveliest of the Azaleas, *Rhododendron Schlippenbachii*, the Royal Azalea, is in flower on the Overlook: its large flowers of clear soft pink harmonize with the Japanese cherries and the flowering crabapples. While these latter can be seen at several places, the large collection at the foot of Peters Hill, on the Roslindale side of the Arboretum, is worthy of a special trip. Some species are in flower and others are in bud; for at least another fortnight this will be one of the most interesting collections in the Arboretum. The earliest of the lilaes are now in flower and many varieties should bloom by the end of this week.

EDGAR ANDERSON

EXPLANATION OF THE PLATES

Prunus serrulata Lindl. var. **spontanea** Wils. after Makino
in Ic. Fl. Japon. (1900).

ARNOLD ARBORETUM
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BASSWOOD BARK AND ITS USE BY THE INDIANS. MANY of the plants used by the Indians have found an important place in our civilization. We grow their corn, tobacco, and potatoes on an enormous scale: we tap the sugar maple as they did: we smoke their tobacco. Their fiber plants have not fared so well. Most of them have been supplanted by immigrants from the Old World. A few of the ancient American species are occasionally tried out on a small scale but for the most part they are grown no longer, and except for a few specialists their very uses are forgotten. Such has been the fate of the fiber obtained from our common Basswood, *Tilia glabra*. It was once the main source of fiber for the Woods Indians of eastern North America. From its strong inner bark they made thread and rope which in turn were worked up into mats, bags, and baskets.

In her book on "Chippewa Customs", Miss Frances Densmore gives the following account of the use of Basswood among the Chippewa:

"One of the most important articles in the economic life of the Chippewa was the twine made from the fiber that lies between the bark and the wood of the basswood tree.

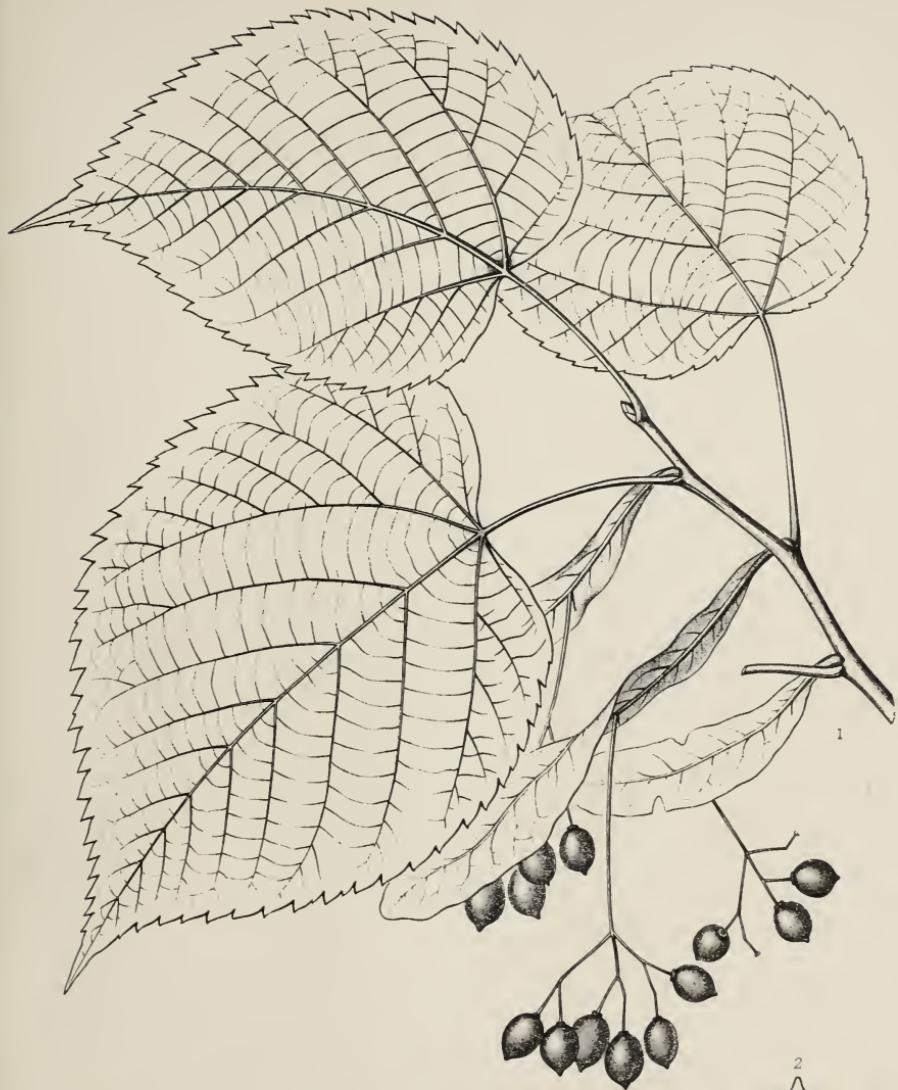
"In removing the bark from the tree an incision was made at a point as high as a man could reach, the cut descending straight to the ground, after which the bark was turned back in a sheet. It was then cut in lengthwise strips about four inches wide and laid among the reeds at the edge of a lake or pond, being held in place by tying the reeds together above it. There it remained for about 10 days. The writer saw these strips of bark taken from the water, softened and slippery from soaking. The rough outer bark was easily detached and the soft yellow

fiber or inner bark heaped in the bottom of the boat. In this form it was ready to store with a woman's supply of birch bark, reeds, and other materials. There were many layers of this fiber, and the entire thickness would be needed for the strips in bags for boiling gum or in making baskets. Somewhat thinner fiber was used for woven bags, and one thickness was sufficient for twine, the fiber being split when the twine was made. In separating the layers of bark an Indian woman begins in the middle of a strip perhaps six feet in length and works toward the ends.

"Basswood bark was an article in such frequent use that a woman had a quantity of it in all thicknesses at hand and prepared it in various ways as it might be needed. If she wished to tie a small packet, she usually moistened a strip of bark by drawing it between her lips.

"The bark to be used for twisted cord was prepared by moistening it, separating it into layers, and tearing strips of the desired width. If the twine is to be very strong the bark is boiled. The woody fibers are detached from one another and the bark softened by drawing the strips of bark back and forth through the pelvic bone of a bear. This work, in old times, was usually done by children. The process of making twisted twine is described as follows by Dr. Skinner. The woman 'takes two of the fibers in one hand and holds them, spread a few inches apart, against her bare shin. She slides the palm of her other hand backward and forward over them until the fibers twist together. At the end of each yard she combs the fibers with her fingers, selects two more, and rolling half an inch of their ends with the ends of the old piece, makes a splice so perfect that it is invisible'. The work, as seen by the writer, was done on the flesh of the right leg above the knee, this forming a cushion on which the fibers were readily twisted. The entire process is dexterous and surprisingly rapid. Twine made in this manner was an important article of economic use."

All this is gone with the change from an Indian civilization. Basswood is an excellent fiber, but it cannot compete commercially with cotton, flax, and jute. There may be, however, some few white Americans who, like the author, will be interested in basswood bark even though it has no commercial possibilities. These few will be glad to know that it is surprisingly easy to obtain the fiber; one need not go into the process as thoroughly as did the Indians. Even a civilization-spoiled American, with a little practice, can produce twine superior to any on the market, or rope which will support two or three men. The



3



4



5



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whole process from tree to twine need not take longer than thirty minutes though greater pains will produce a more finished product.

The material is unusually adaptable and everything from fine sewing thread to strong baskets can be produced from the same gathering of bark. It can be taken from the tree at any time of year, though naturally it slips off most easily when the sap is running in the spring. Unless a very large amount is required, a single limb about four or five inches in diameter will provide plenty of material. Very often there are suckers sprouting up about the trunks of large trees and these are good material to work with, nor does their removal disfigure the tree. A five to six foot length, without side branches, is preferable if it can be obtained. A blunt wedge, inserted between the bark and the wood will start the bark to slip; it can be then taken off in long strips or pulled back in one piece like a glove. When it first comes off the tree the inner bark is soft and pliable; it can be worked up into string or rope, or cut in wide strips and used for weaving baskets. These latter will stiffen on drying and become very strong. A small tightly woven basket made by the author from freshly cut bark will now support the entire weight of a full grown man.

String, rope, and thread can be made from the inner fibers in the manner described by Miss Densmore. One can use freshly gathered bark which is still pliable, or older material can be softened by soaking in warm water. The process goes much faster when, like the Indians, one uses the bare thigh for the twisting. The work is done most easily with two strands, one for each hand. There is only one important principle to be remembered. *The strands should twist about each other in the opposite direction from which each is twisted on itself.* This sounds very complicated but a little practice will show that it is really a very simple trick to learn. If, for instance, the two strands are being twisted about each other in a clockwise direction, each should first of all be twisted *counter-clockwise* on its own axis. One soon learns to keep each strand rolling rapidly between thumb and forefinger, while the two are being twisted about each other in the opposite direction. If correctly twined they will not unwind, even after they have been cut, and the cord will be strong and even. Coarse cord is easily made; more practice is necessary before one can turn out thread fine enough for a needle. In the Field Museum of Natural History and in other institutions where there are large collections of Indian work may be seen beautiful bags and mats made in whole or in part from basswood bark. With a little patience, the interested white craftsman should be able to produce arti-

cles of similar workmanship from this durable and versatile fiber.

EDGAR ANDERSON

EXPLANATION OF THE PLATE

Leaves and fruit of the Basswood or American Linden, **Tilia glabra** Vent. (= **Tilia americana** L. in part).

(*From drawings by C. E. Faxon for Sargent's "Silva of North America".*)

PLANTS OF CURRENT INTEREST. HEAVY showers on the evening of May twentieth gave the Arboretum a much needed watering and the collections are now in splendid condition. Many of the Rhododendrons are already in flower, the Azaleas are in their prime, and the Lilac collection is still giving a fine show of bloom. The American species of Crabapple are now at their best and may be seen along the bank beyond the Forest Hills Entrance and at the foot of Peters Hill. The trees in the latter collection are particularly fine and are well worth a special visit. They can be reached by a two minute walk from the Bussey Street Entrance. It seems unfortunate that more people do not visit the Arboretum in the late afternoon and early evening. The delicate tints of the Lilaes and Crabapples show to their best advantage just before and after sunset and the gates remain open until well after sundown.

WANTED. THERE was at one time in cultivation in this country an upright or bushy variety of the common Trumpet Creeper. It was variously known as *Bignonia radicans speciosa*, *Tecoma radicans speciosa* and *Campsis radicans speciosa*. The Arnold Arboretum formerly had a fine specimen which was eventually lost and which it is desired to replace. So far as we know the variety is no longer offered by any American nursery. We will be glad to hear from anyone who has small plants for sale or who is in the possession of large bushes from which scions might be obtained.

EDGAR ANDERSON

TRÉES USED BY THE PIONEERS. The early white settlers probably learned something of the uses of basswood fiber from the Indians, and they employed it in a similar way for cord and rope until it was superceded by hemp and cotton fibers. The tree is also much esteemed by bee keepers, because of the excellent honey furnished by the flowers, and in some parts of the south it is locally called bee-tree. The easily worked wood was used for many purposes, including bowls for kitchen use. And because of the fact that it bends readily, it was generally employed in making ox-yokes.

Although the early settlers in the heavily forested parts of the country were prone to have little respect for trees and to regard the forest rather as an enemy to be overcome than as a friend, they were, nevertheless, dependent upon it for supplying many of their needs. Besides furnishing them fuel and shelter, they drew upon it for material for fences, furniture and many necessary implements and useful articles. It contributed directly, though only in a minor way, to the food supply, but as a shelter for game and as a hunting ground it was even more important.

The oaks and other hard woods furnished logs for the cabin walls and clapboards for the roof. The wood of the shingle oak (*Quercus imbricaria*) was particularly valued for the latter purpose, because of its straight grain that split readily under the mallet and flail. The bark of the black oak (*Quercus velutina*) was valued most highly by the tanner for converting hides into leather. Hickory was the favorite fuel wood, and it also furnished the best material for axe and other tool handles as well as for wagon timber. Hickory chips burned slowly in the smoke-house, were also reputed to impart an exceptionally good flavor to bacon and hams. Rope and coarse twine were also sometimes made from the inner bark of the hickory, and we read of hickory "galluses" doing duty in men's apparel, but they scarcely convey an impression either of comfort or security. The tough bark of the leather-wood, where it was found, was probably a much better material for such purposes. Black walnut was so common in many parts of the Middle-west that in addition to its wood being employed in house building and in the earliest cabinet making, millions of feet of the finest logs were split up into fence rails and posts. This tree and the butternut also furnished the pioneer wives with a dark brown dye for coloring homespun cloth. This was made from a solution of the hulls surrounding the nuts, and if anyone doubts its effectiveness or lasting qualities, it can be easily tested by handling and hulling the freshly

fallen nuts. The black oak also furnished primitive dyes, and ink was made from the fruit of the inkberry or poke, or from oak galls and iron rust. Soap making was a home industry, and lye had first to be made from wood ashes.

Candles were made from the wax of the bayberry or wax myrtle, used either alone or mixed with tallow. Bayberry candles are still sometimes made in some localities on Cape Cod and in other parts of the country, but their fabrication is now more of a tradition and a ceremony than a practical industry.

There is no American tree about which more pioneer lore and sentiment clings than the sugar maple. To the early settlers in the northern parts of the country it furnished one of the few luxuries that were available in the way of food, and the tapping of the trees in early spring and the boiling of the sap into sugar were something of a ceremony as it still is in parts of New England.

Fruits and nuts were a minor but not negligible source of food. Wild plums, blackberries, wild grapes, chestnuts, butternuts, hickory-nuts and pecans were amongst the sorts most generally prized for human consumption, and the supply of acorns and other "mast" was largely relied upon to fatten hogs and turkeys. Persimmon beer and wild cherry wine acquired vogue in places where these native fruits were abundant, but they never equalled in popularity the traditional hard cider of New England.

Many native plants early gained a reputation for medicinal virtues. It is probable that the uses of some of these were learned from the Indians, and those of others from Old World folk lore were transferred to similar American plants. Sassafras tea was a spring blood remedy, and it is still esteemed as such in some parts of the country. The bark of the slippery elm and of the prickly ash and the roots of moonseed and wild yam all had their uses in the simple pharmacopoeia of the pioneers, along with the leaves, roots or seeds of many herbaceous plants.

ERNEST J. PALMER

ARNOLD ARBORETUM
HARVARD UNIVERSITY



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JABBERWOCKY. Though botanical barbarisms like *Pseudotsuga taxifolia* and *Chamaecyparis nootkatensis* are not exactly euphonious they are a great advance on the long phrases which they displaced. When Linnaeus gave the weight of his authority to the simple "binomial system", phrases like the CLEMATIS AMERICANA FLORE PHOENICEO of the accompanying illustration were replaced by short, two-parted names, a generic term followed by a specific one. Individual plants are now indexed under species and the various related species are grouped and indexed under genera. When he first comes into contact with these mystic polysyllables, which the botanists calls, "scientific names", the average layman can appreciate the remarks Alice made after reading "Jabberwocky" in her excursion through the looking-glass. You will remember that the poem told of "Slithy toves" and how they did "gyre and gimble in the wabe". "Somehow", said Alice, "it fills my head with ideas only I don't exactly know what they are".

But botanical names are really more than "Jabberwocky". After a little familiarity with seed lists and flower catalogues, the fog begins to clear away. Many of the names still remain meaningless and unfamiliar but here and there intelligible syllables like *japonica* and *maritima* are found to reappear with obvious connotations. When one at last begins to realize that these cataloguing devices are something more than mere nonsense syllables he is in a fair way to profit from their use. Some of these names indicate the habit of the plant, others its origin; the great majority refer to the peculiarities of that particular genus and species.



The specific names are most commonly descriptive. Some of the terms which occur most frequently and which are useful in that they tell a little something about the plant are the following:

Those describing the habit of the plant

scandens	climbing
repens	creeping
fruticans or frutescens	shrubby

Those describing the locality in which the plant grows

palustris	marsh loving
rupestris	rock loving
arenarius	of sandy places

Those interested in choice Asiatic shrubs will do well to remember the names *amurensis*, *tangutica*, and *sachalinensis*. All three are to be found in various spelling for when Asiatic place names are transliterated into latin every man is his own master. *Amurensis* refers to the Amur river between Manchuria and Siberia. It is the home of our "Amur Privet", and the Amur Corktree, *Phellodendron amurense*. It is a region of hot summers and cold winters. Plants labelled *amurense* may be expected to withstand our difficult American climate. *Tangutica* carries us back to the times of Marco Polo when the Mongol emperors conquered the kingdom of Tangut and united it with their empire. Then as now, its Chinese name was Kansu, but Marco Polo, attached to the Mongol court, was not overly familiar with Chinese and used Mongolian terms when he dictated his famous book. So it came about that European scholars heard about Tangut before they were familiar with Kansu, and many Chinese plants bear that specific name. Kansu is not so far north as the Amur river and a species called *tangutica* is apt to be a little too tender for New England gardens. Saghalin is the long narrow island north of Japan. It has a cold but damp climate and species named *sachalinensis* are apt to be more winter hardy than drought resistant.

A few of these geographical specific names have to be taken with a grain of salt, particularly those referring to our Atlantic seaboard. When collectors first sent back plants from the American wilderness to European botanists, the words, Canada, Virginia, and Carolina were very loosely applied. In those days Canada or Virginia might refer to almost any point along the eastern coast. So we find the fragrant sumac masquerading as *Rhus canadensis*, though it is a common shrub in many southern states and is native to only a portion of Ontario. The wild barberry of our southern states is known botanically as *Berberis cana-*

densis though it does not grow wild anywhere in modern Canada.

Specific names often bear tribute to the discoverer of the plant or to a friend of the man that named it. Many trees and shrubs are known the world around by names associated with the Arnold Arboretum—*Arnoldiana*, *Sargentii*, *Rehderiana*, *Wilsoniana*, and *Jackii*. Sometimes this connection is less evident, as when Dr. Wilson named a lovely Chinese rose “*Helena*” after his wife or when an English botanist named an unusual shrub “*Sinowilsonia*” in a rather playful attempt to turn Dr. Wilson’s nickname into latin. These recondite combinations are not always easy to pronounce. What, for instance, is one to do with “*ecae*”, the specific name of one of the early flowering yellow roses from central Asia? The name was given it by Aitchison and is said to be composed of his wife’s initials. Here at the Arboretum most of us have settled down to pronouncing it “*ekkee*”, but “*eessee*” and “*essigh*” are sometimes heard.

The generic names are a study in themselves. An explanation of their origin will be found sandwiched away between parentheses in most modern botanical manuals. References to these notes will do more than aid one in remembering the name as a cataloguing device. It will lead down many an unexpected alley into history and geography and literature. Continued over a long period it may even become a rough and ready substitute for that classical training in word origins which is denied to most modern Americans. “*Dendron*” in *Rhododendron* and *Liriodendron* means tree. Knowing this, one finds the same root being used in other words and understands why a *dendrologist* is one who studies trees, or how the branching nerve system of a tooth may be referred to as “*dendritic*”. “*Speciosa*” means showy and once that is learned the familiar phrase about *specious* arguments acquired a new significance. The attempt to understand botanical “*Jabberwocky*” brings one at last to a better appreciation of English speech and a new precision in its use.

EDGAR ANDERSON

EXPLANATION OF THE PLATE

The common American Trumpet Creeper, **Campsis radicans**, as illustrated in a horticultural treatise of the seventeenth century under the name of **Clematis Americana Flore Phoeniceo**.

ARNOLD ARBORETUM
HARVARD UNIVERSITY



BULLETIN
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SOME HARDY SOUTHERN TREES AND SHRUBS. One of the useful services of the Arnold Arboretum and similar institutions is to test the hardiness, adaptability to cultivation, and general desirability of plants from all parts of the world. This work is carried on continually even with plants for which the chance of success seems slight. Many plants are tried out that do not survive, but amongst those that do thrive are some of considerable interest which find a permanent place in gardens or in landscape planting. The pioneer work of the Arboretum in the discovery and introduction of the trees and shrubs of China and other parts of eastern Asia is well known, and many Oriental plants now frequently found in American or European gardens were first grown here. But perhaps little is known by the general public of the number of trees and shrubs from our own southern states that can be seen growing in the Arboretum. All of these are of interest to the students of American plants, and some of them are desirable for general planting.

In the latitude of Boston, with the severe winter temperatures sometimes experienced, climate is the most important limiting factor in the introduction and growth of southern plants, but other things, such as soils, the length of the growing period and seasonable rainfall have to be taken into consideration. Since many plants prove hardy under cultivation far north of the latitudes in which they grow naturally, their present distribution must be explained on other grounds than that of the climate alone.

It is often impossible to tell whether a plant will prove hardy until it has been tried, and while it is naturally impossible to grow most of



the sub-tropical southern plants out-of-doors in New England, occasionally some rather surprising successes have been scored. These are often, though not always, southern species of trees and shrubs closely related to northern ones, for in general it has been found that southern representatives of the northern groups are much more likely to stand transplanting to colder climates than are those of genera entirely southern in their natural distribution. Thus, almost any of the southern Willows, Maples, Birches and Alders, and many of the Oaks, Hickories, Azaleas, Dogwoods, and most members of the Rose family, are likely to be hardy here.

The Bald Cypress, one of the most picturesque trees of the southern swamps, has been grown in the Arboretum, but this appears to be about its northern climatic limit. As a native tree it ranges only as far north as southern Delaware, and while it grows naturally only in swamps or along the borders of streams and bayous, it thrives in fairly dry situations when transplanted. One of the reasons why it has not travelled farther north without assistance is probably because of the special requirements of its seeds, since these seem to germinate in nature only after long submergence in shallow water or mud. And since the seeds are rather heavy and not easily transported, the Bald Cypress has not found a continuous succession of suitable places farther north.

The Oaks (*Quercus*) have a wide geographical range, most of our species being found in temperate regions, some extending as far north as the limits of the deciduous forests, and others being confined to warm countries. A few of the Oaks of the Rocky Mountain states have been grown in the Arboretum, but none of those from the Pacific coast have proved successful. But the Oak collection contains several from the southern states, including the Overcup Oak, Basket Oak, Willow Oak, Georgia Oak, and Arkansas Oak.

The Sweet Gum (*Liquidambar Styraciflua*) is one of the commonest deciduous trees in many parts of the southern United States, and it is occasionally found wild as far north as southern Connecticut and Pennsylvania. It seems to be quite hardy here, and some thrifty specimens can be seen near the small ponds, not far from the Forest Hills entrance of the Arboretum. It is a handsome shapely tree and is desirable for planting in certain places for shade or ornament. The rather large 5-7-lobed, star-like leaves give it an unusual appearance, and it is particularly attractive in autumn when the leaves take on brilliant tints of yellow and crimson.

Many of the native Azaleas of the southern states have been brought

into cultivation here, and some of them are very handsome. *Rhododendron calendulaceum*, with yellow to scarlet flowers, and *Rhododendron speciosum*, in which the flowers are of a somewhat deeper red, are amongst the most striking of these.

One of the most desirable late-blooming shrubs that has deservedly become better known in the last few years, is the white-flowered Buckeye (*Aesculus pariflora*). It is a native of the Piedmont regions from South Carolina to Florida and Alabama, but it stands the winters well in the vicinity of Boston, and a handsome clump of it may be seen in the Arboretum at the foot of the wooded knolls and at the western edge of the Horse-chestnut group. It is a vigorous spreading shrub up to ten or twelve feet in height, and its profusion of white flowers in erect terminal spikes make it a most attractive sight in July and early August when nearly all other trees and shrubs are through blooming.

The red-flowered Buckeye (*Aesculus discolor*) is another shrubby southern species that has much to recommend it. It blooms in the Arboretum early in June, and the flowers borne in a loosely-flowered spike are of mixed yellow and scarlet. It grows naturally from Georgia to eastern Texas.

Amongst the notable small trees from the southern states growing at the Arboretum is *Gordonia alatamaha*, a plant not now known in the wild state, although the seeds are said to have been collected many years ago in Georgia by William Bartram. It blooms here each year, although the plants are barely hardy and are partly winter-killed in severe seasons. The large single white flowers that appear in late summer or autumn, and the large, bright green, obovate or narrowly elliptic leaves that become brightly colored late in the season, make it very attractive.

The Oak-leaved Hydrangea (*Hydrangea quercifolia*), from Georgia, Florida and Mississippi; the Mock-Orange (*Philadelphus pubescens*), from Tennessee and the southern Ozarks; and (*Neriusa alabamensis*), a rare shrub, somewhat related to the Spiraeas, known only from a small area in Alabama, are other distinctly southern shrubs that have been grown in the Arboretum.

The Cork Wood (*Leitneria floridana*) is another rare and interesting shrub or small tree of the southern states which may be seen at the Arboretum. The name Cork Wood is well-deserved, as the wood when dry is extremely light and porous and considerably lighter than common cork, and with the exception of the Balsa Wood of the West Indian

and Caribbean regions, it is the lightest known. It is known only from a few widely scattered localities, having first been discovered in western Florida at a station later destroyed by encroachment of the sea. The plant was supposed to have become extinct until it was rediscovered in 1895 in the deep swamps along the Mississippi River, in southeastern Missouri and northeastern Arkansas. It has also been found locally in southern Georgia and near the mouth of the Brazos River in Texas. In its native swamps along the Mississippi it sometimes becomes a small tree twenty feet in height with a trunk diameter of four or five inches, but at the Arboretum it is scarcely more than a shrub in size, the largest specimens being eight or ten feet high. The bark is smooth, of a brownish color and marked with pale dots, and the stout branches have numerous half-moon-shaped scars arranged in about five ranks. The leaves are broadly lanceolate, five to eight inches long and two to three inches wide. They are of a thick leathery texture, dark green and conspicuously net-veined above, and are thickly coated on the under side with pale brown tomentum. The catkins, which appear before the new leaves, are somewhat like those of the Cottonwood, and as in the Cottonwoods and Willows, to which the Cork Wood is somewhat related, the staminate and pistillate flowers are on different plants. Only plants with pistillate flowers are growing in the Arboretum, but since these occasionally produce scattering seeds, it would seem that the sexes are not perfectly distinct.

The Cork Wood is little known in cultivation, and can scarcely be seen outside of a few botanical gardens and parks. It was first grown at the Missouri Botanical Garden after its rediscovery by a collector for that institution. At the Arboretum it is growing in a little boggy depression near the south end of the Horse-chestnut group, and between the native woods and the road. It appears to be perfectly hardy here, and on account of its attractive foliage and remarkably light wood, it might be an interesting novelty for planting about the marshy borders of ponds and streams.

ERNEST J. PALMER

A SIMPLE DEVICE FOR EXHIBITING FLOWERING SHRUBS. THE Arnold Arboretum has recently developed a new type of flower holder for exhibiting flowering shrubs. While in several respects it is still capable of improvement, so many inquiries have been made about its construction that the following account has been prepared.

Only those who have tried to exhibit lilacs and other flowering shrubs can appreciate the difficulties of arranging woody material for exhibition. To show to the best advantage they need to retain in the vase the approximate position they held on the tree. In any ordinary container the heavy branches develop a mind of their own and it is difficult to make them stay where they are put. One must either crowd the vase full of branches so that they support each other, or use a flower holder which is attached to the vase or which is so heavy that it will not tip over. The perfect exhibition vase for woody material should therefore, in addition to being cheap and inconspicuous, be capable of holding branches in any desired position and should be so low and heavy that it is not easily upset.

A container which meets these requirements has been achieved by pouring plaster of paris into flat pottery dishes and providing the plaster with guy wires before it hardened. Any cheap pottery dish with a broad flat base can be used as the foundation. The original vases were made from regulation "puppy dishes" sold by a local firm as they were readily available in any quantity at a reasonable price. The dishes were prepared by mixing plaster of paris to the consistency of a thick cream and pouring it in to the height of about one inch. While the plaster was still liquid, three to five pill bottles, coated with vaseline, were inserted in the mixture to provide holes for the branches. One or two short lengths of wire were anchored in the plaster, their lower ends, bent into a double loop to make them hold more firmly. As soon as the plaster began to set, the bottles were carefully removed. When the plaster dried, the finished utensil was something like a shallow pottery dish with a built-in flower holder. Additional support for heavy branches is given by the wires.

In setting up an exhibit the branches are held in the desired position, the wires are wrapped around their bases until the branches are held firmly in place, and a handful of pebbles is used to conceal the wire and plaster and to lend additional support. Very much the same effect

could be obtained by anchoring a glass or metal flower holder in the bottom of a vase with plaster of paris, providing it with small guy wires, or thin strips of metal. If a large quantity were desired they could probably be made in one piece by the pottery manufacturers.

EDGAR ANDERSON

PLANTS OF CURRENT INTEREST. THE Mountain Laurel (*Kalmia latifolia*) has burst quickly into flower during the last few days and is now a glorious sight. Unless the weather is unseasonably hot it should remain in fine condition until at least the end of June. Though no other single display can match it in interest, there is much to see in all parts of the Arboretum. Many Hawthorns are in flower on the north slope of Peters Hill. On the Lilac Path the Tree Lilacs are showing their great plumes of creamy flowers and the hybrid French Mock-Oranges are in full bloom. Along the Meadow Road the wild roses are bright pink every morning and several species of Dogwood are in blossom. In the Shrub Collection most of the rose species are in bloom. On the fence of the Bussey Institution along South Street may be seen a fine collection of Hybrid Climbing Roses.

The alternate-leaved Buddleia, *B. alternifolia* Maxim., is now in full flower on the Overlook and along the Centre Street Path. Earliest to flower of those species which are hardy here, it has a long season of bloom, covering the whole month of June and sometimes running well into July. Though it is often referred to as the hardiest of the Buddleias, it is a little too tender to do its best in New England gardens. Even in New York and Philadelphia it needs a dry slope, and careful attention to reach perfection. When well grown it is one of the loveliest of flowering shrubs; with us the bush is somewhat unsightly when not in flower and the flower buds are partly killed during cold winters.

Though discovered by a Russian expedition to China as early as 1875, it was not introduced into western gardens until much later. Farrer sent home seeds in 1914 and by 1922 these had produced fruiting bushes from which the Arboretum plants were raised. Farrer who saw the species in full flower in its native home, wrote of it as follows: "It prefers steep, dry banks and open warm places, where it grows like a fine-leaved and very graceful weeping willow, either as a bush or a

small-trunked tree, until its pendulous sprays erupt all along into tight bunches of purple blossom at the end of May, so generous that the whole shrub turns into a soft and weeping cascade of colour". He tells how it persists in cultivated areas where it may be found "in cascades of purple along the hedgerows".

EDGAR ANDERSON

EXPLANATION OF THE PLATE

Leaves, flowers, and fruit of the Corkwood, **Leitneria floridana**
Chapm.

(From drawings by C. E. Faxon for Sargent's "Silva of North America".)

ARNOLD ARBORETUM

HARVARD UNIVERSITY



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HYDRANGEA PETIOLARIS AND SCHIZOPHRAGMA HYDRANGEOIDES. FEW specimens in the living collections of the Arnold Arboretum excite more surprise in the average visitor than do these two asiatic vines. They are evidently Hydrangeas or are at least closely related, yet they cover the north wall of the Administration Building with a solid coat of shrubbery which breaks dramatically into flower every summer. Though reaching to the eaves they remain essentially shrub-like and are perhaps more appropriately described as climbing shrubs than as true vines.

Once recognized, the two species are readily told apart, but until quite recently they were badly confused in nurseries, private collections, and botanical gardens. They are most easily distinguished by the large showy flowers which surround the flower cluster. In *Hydrangea petiolaris* this encircling tiara is composed of greenish white flowers, each one made up of four rounded sepals. In *Schizophragma hydrangeoides* these showy sepals are a purer white and they are borne singly rather than in fours. These and other technical differences are shown in the plates on pages 54 and 55. Gardeners will be more interested in the fact that *Schizophragma* blossoms later in the season, that its leaves are a lighter green, that the sepals remain conspicuous long after blossoming time and that in many ways it is a neater, cleaner, more garden-worthy vine than *H. petiolaris*.

Unfortunately neither vine blooms until it is fairly mature. For the convenience of those who are interested in identifying immature specimens, the outstanding vegetative differences are tabulated below.

H. PETIOLARIS Sieb. & Zucc.	S. HYDRANGEOIDES Sieb. & Zucc.
Leaves definitely heart-shaped.	Leaves scarcely rounded at the base.
Lower surface of the leaf of practically the same color as the veins.	Lower surface of the leaves much lighter in color than the veins.
Bark shredding off in silky strands.	Bark firm with conspicuous dots.

HYDRANGEA PETIOLARIS





HYDRANGEA PETIOLARIS Sieb. & Zucc.



SCHIZOPHRAGMA HYDRANGEOIDES Sieb. & Zucc.





SCHIZOPHRAGMA HYDRANGEOIDES

So badly were the names of these two species interchanged during the early days of their introduction to the western world that it is difficult to determine when each was first grown in America. The mere presence in a nursery catalogue of one name or the other is not enough. There must be a specimen or an exact description covering at least one of the features by which the two vines can be distinguished. One thing is certain. Though it may possibly have been brought in earlier through some unrecorded channel, *H. petiolaris* is definitely known to have been introduced in 1865 through the old Parson's Nursery at Flushing, Long Island, whose material was obtained (though under the wrong name) from Thomas Hogg, an American consul. It was not until 1876 that the Arnold Arboretum obtained seeds from Japan, but so completely had the earlier introduction been overlooked that even the late Dr. E. H. Wilson listed the vine among the introductions of the Arnold Arboretum in his well known book, "America's Greatest Garden". This mistake was perpetuated by the present author in the Bulletin for November 16, 1931; a mistake which it is a pleasure to set right, since that serves as an excuse for reminding present day gardeners of their debt to the fine old Parson's Nursery, long since disbanded, and to Thomas Hogg, who once maintained one of the most interesting private collections in the United States.

Both vines have done well in this country and as they become better known will be increasingly useful in our gardens. They are perhaps a little too robust for the average house, but for covering stone walls and fences they are superb. In the rock garden of Mr. Thomas Proctor at Topsfield, Massachusetts, there are fine specimens of *H. petiolaris*, which have been allowed to clamber freely over a long boulder strewn slope. Used in this way they are so effective that one wonders if they might not well be used as a bank cover on rocky slopes. In their native home both vines climb the trunks of tall trees and blossom among the lower limbs. Although it is always a matter of personal opinion, there are many who, like the present author, believe that these two vines never look better than when one follows Nature and plants them at the base of an old tree.

EDGAR ANDERSON

EXPLANATION OF THE PLATES

Page 54. **Hydrangea petiolaris** Sieb. & Zucc.

Page 55. **Schizophragma hydrangeoides** Sieb. & Zucc.

(*From drawings in T. Nakai's "Flora Sylvatica Koreana".*)

Insert. **H. petiolaris** and **S. hydrangeoides** ($\times \frac{1}{4}$). (The latter includes a few leaves of **H. anomala**.) (*From photographs by Dr. H. M. Raup.*)

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PTEROCARYA REHDERIANA. SOME millions of years ago in the age of Reptiles, Pterocaryas, or Wingnuts as they are sometimes called, were native to the forests of Europe and America. Just when they left we do not know for the fossil record is incomplete, but they finally disappeared from the western world along with the dinosaurs and pterodactyls. Unlike these fantastic creatures they did not vanish altogether from the earth. A few species lingered on, one in the region around the Caspian Sea, several others in southeastern Asia. Long after their disappearance they have been brought back, not as fossils, but as living curiosities and are occasionally to be found in botanical gardens and large private collections. The Caucasian Wingnut, *Pterocarya fraxinifolia*, was the first to reappear. It was brought to France by that same Frenchman, André Michaux, who later came to America and tramped through the wilderness studying the flora and collecting trees for the French government. One of the Chinese species, *P. stenoptera*, was brought into cultivation somewhat later through the efforts of the Rev. Graves, an American missionary.

It was in France where both these species were grown in the Arboretum Segrezianum that they apparently hybridized. Seed collected there from *P. stenoptera* was sent to the Arnold Arboretum over fifty years ago. When the young trees developed they were not like the Chinese Wingnut but were instead intermediate between that species and the Caucasian Wingnut, *P. fraxinifolia*. After studying them carefully Alfred Rehder of the Arnold Arboretum came to the conclusion that they were in fact hybrids between these two species. This conclusion has been generally accepted and by a German dendrologist they were eventually named *P. Rehderiana*.

Although the behavior of the second generation grown from the original hybrids has helped to confirm the hypothesis of their hybrid

origin, it is an interesting fact that the hybrid has not been duplicated elsewhere. So far as is known all the specimens of *P. Rehderiana* in cultivation are the descendants of the Arnold Arboretum trees which originated when, by a fortunate accident in the garden at Segrez, pollen from the Caucasian species was brought to the receptive stigmas of *P. stenoptera*.

Like many hybrids *P. Rehderiana* is unusually vigorous. While neither of the parent species has grown well with us, the hybrid seems to be thoroughly at home here. In fifty years the original seedlings have developed into bushy trees with trunks two or three feet thick and have come through all but the coldest winters without injury. For such large trees they have a curious habit of growth. Each has several stems; there is no main trunk and their general bushiness is enhanced by the lusty root-suckers which are thrown up in great profusion.

Botanically, the genus *Pterocarya* is closely allied to the Walnuts and in several features the resemblance is fairly close. The leaf shape is similar as is the color and texture of the foliage. The pith of the branches, as in the case of Walnuts, is not a solid spongy cylinder but is divided up into tiny compartments or chambers. Were it not for the fruits our hybrids might easily be mistaken for some vigorous, bushy Walnut or Butternut. As can be seen in the accompanying plate, the fruits are curious and unusual. The tiny nutlets, no thicker than a pencil, are each set in a little green bowl, which flares out at either side into triangular wings. The individual nutlets are borne in long chains a foot or more in length and give the trees a bizarre appearance.

While the hybrid Wingnut is too coarse and weedy for the average garden there are certain situations in which it might be particularly useful because of its unusual vigor. As a quick-growing screen it is certainly worth trying. It is expected that it would be particularly useful in wet or poorly drained soils since both parental species grow naturally in such situations. The Caucasian Wingnut grows on marshy deltas and along the banks of streams in the region around the Caspian Sea. The Chinese Wingnut is found wild along watercourses though it is sometimes planted in China as a street tree.

Until they are better known, Pterocaryas should not, however, be planted in the immediate vicinity of perennial gardens. Their close relatives, the Walnuts, sometimes have a toxic affect upon plants growing nearby, apparently due to a poison contained in the leaves. It is quite possible that Pterocaryas might be similarly endowed. Certainly the Caucasian species contains a substance potent enough to stupify



C. E. Faxon del.

fish, when quantities of the leaves are thrown into the water.

PLANTS OF CURRENT INTEREST. THE *Pterocarya* collection is located along the Centre Street Path at a point where natural seepage provides a favorable site. A number of other interesting trees are in fruit along this path, notably the Chinese Quince, *Chaenomeles sinensis*, and the American Papaw, *Asimina triloba*. Here is also to be seen a rare member of the Mint family, *Comanthosphace sub lanceolata*. It is sometimes described as shrubby and may perhaps be so in a warmer climate but with us it is a true herb, dying back to the roots every winter. It is rather coarse, resembling in many ways the related genus *Elsholtzia*, but its late-flowering habit gives it some garden value. It was brought back from Japan by Professor C. S. Sargent over forty years ago and was introduced into English gardens through seeds sent by him to the Royal Botanic Garden at Kew.

On the Overlook *Albizzia julibrissin rosea*, described at length in the Bulletins for July 26, 1929, and August 21, 1931, has been in flower since June. There and along the Centre Street Path, *Gordonia (Franklinia) altamaha* is flowering unusually well. This beautiful shrub (illustrated in the Bulletin for November 26, 1930) has had a curious history, a full account of which by C. F. Jenkins has recently appeared in the "Pennsylvania Magazine of History and Biography". The species was first discovered by two Quaker botanists, John and William Bartram in September 1765, growing in profusion on the banks of the Altamaha river in Georgia. They introduced it into cultivation and following their directions Dr. Moses Marshall collected it at the same locality in 1790. Since that date it has not been found again. Many botanists "have combed the muddy swamps which border the Altamaha in the region of old Fort Barrington to their own great discomfort and the annoyance of the rattlers and other venomous snakes which infest the region. Fire may have destroyed the original plantation, it may have been grubbed out by the early settlers, or the salt tides may have backed up the river, or again freshets may have washed it away. Several times in recent years the daily press has carried a news item that the Franklinia had been found but these have all been erroneous."

EDGAR ANDERSON

EXPLANATION OF THE PLATE

Leaves, flowers, and fruit of the Hybrid Wingnut, ***Pterocarya Rehderiana*** Schneid. (=*P. stenoptera* DC. x *P. fraxinifolia* Spach.)
(From drawings by C. E. Faxon for Sargent's "Trees and Shrubs".)

ARNOLD ARBORETUM
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FOATHERGILLA MAJOR. FORTUNATE, indeed, are those plants whose common names are attractive and imaginative. The very name of "Butterfly Bush" served as a letter of introduction when Buddleias were first offered to American gardeners. Part of the public interest in *Davidia involucrata* is due to the popular name of "Dove Tree", an imaginative allusion to the large white bracts below the flowers. Lacking such a name, the Fothergillas have made their way slowly into public favor. In the southern states, where they grow wild, country children sometimes call them "Bottle-brush Bushes" because of the curious shaggy flowers of dull white. Sometimes they are called "Granny Greybeard" or "Grant's Greybeard", though these names are also used for other quite different shrubs. Within recent years the name "Springscent" has been suggested, and if it becomes current it may prove useful.

There are several species of *Fothergilla* but for northern gardens the most desirable is *Fothergilla major* with which may be included the very similar *F. mouticola*, by many botanists considered to be merely a variety of the former. As its name implies, *F. major* is a tall shrub. Both in the shape of its leaves, and in the general appearance of the bush it shows its kinship to our native witch-hazels. The creamy white flowers are borne in spring, just as the leaves are unfolding. They are massed in tight little plumes at the ends of short, upright branches, each little plume being made up of many individual flowers, whose long, milk-white stamens are their most conspicuous feature. During the summer Fothergillas are surprisingly similar to their cousins, the witch-hazels. More than one botanist, in fact, has mistaken them for a lower, more compact, witch-hazel at that season of the year. As autumn comes on, they again show their individuality by coloring most brilliantly. Some bushes are pure yellow, others are deeply overlaid with brilliant crimson, but in either case the colors are clear.



JOHN FOTHERGILL MD. FRS.

Cui suus artes, sua dona luctus
Et herbam et Venae salientis iutum
Sciore conceperit, celestem et medendi
Delius usum.

From a Bust in the Possession of Dr Lettow

As a result, from a short distance the leaves seem almost to shine as if they had been lacquered.

Fothergilla major and the doubtfully distinct *F. monticola* are native to a very restricted area in the southern Alleghenies. Though grown in England as early as 1780 it apparently passed out of cultivation altogether until it was re-introduced by Professor C. S. Sargent, who sent it to Kew in 1902. This latter attempt has been more successful and it is now occasionally seen in public and private gardens in northern Europe. Surprisingly enough, it seems to be hardy far north of its native home and is known to have come unharmed through temperatures as low as 30 degrees below zero.

It can be grown apparently in any good garden soil, though heavy applications of peat are reported as having a beneficial effect. One or two English writers have listed it as rooting from cuttings but in this country it has been found a very difficult subject. The simplest method of propagation is to pot up small suckers from the base of established plants and to grow them until they are ready for a permanent position. The species can be grown from seed sown when ripe and kept in a cool greenhouse where it germinates in about six months. These seedlings should be grown in small wooden flats for a year or so, and are then ready to be potted up. The old specimens of *Fothergilla* at the Arnold Arboretum have been fruiting well the last few years and seed will be supplied cheerfully to those private and professional gardens, *who have the facilities for taking care of it.*

Though *Fothergilla* may not sound attractive when used as a common name, it is most appropriate that a group of American shrubs should be so designated. Linnaeus named the genus in honor of Dr. John Fothergill, an eminent London physician, who was an unwavering champion of the American colonists during the troubled times of the Revolution. He was a close friend of Benjamin Franklin and of the Philadelphia botanist, John Bartram. It was in Fothergill's garden that many American plants were first grown in Europe. His own description of this Anglo-American garden makes interesting reading:

"Under a north wall", we find him writing to an American friend in 1772, "I have a good border, made up of that kind of rich black turf-like soil, mixed with some sand, in which I find most of the American plants thrive best. It has a few hours of the morning and evening sun, and is quite sheltered from mid-day heats. It is well supplied with water during the summer; and the little shrubs and herbaceous plants have a good warm covering of dry fern thrown over them when the frosts set in. This is gradually removed when the spring

advances, so that as the plants are never frozen in the ground while they are young and tender, I do not lose any that come to me with any degree of life in them: and it is acknowledged by our ablest botanists that there is not a richer bit of ground, in curious American plants, in Great Britain; and for many of the most curious I am obliged to thy diligence and care. My garden is well sheltered: the soil is good, and I endeavour to mend it as occasion requires. I have a little wilderness, which when I bought the premises was full of old yew trees, laurels and weeds. I had it cleared, well dug, and took up many trees, but left others standing for shelter. Among these I have planted Kalmias, Azaleas, all the Magnolias, and most other hardy American shrubs. It is not quite eight years since I made a beginning, so that my plants must be considered but as young ones. They are, however, extremely flourishing. I have an Umbrella tree (*Magnolia tripetala* L.) above twenty feet high, that flowers with me abundantly every spring; but the great Magnolia (*grandiflora*) has not yet flowered; it grows exceedingly fast: I shelter his top in the winter; he gains from half a yard to two feet in height every summer, and will ere long I doubt not repay my care with his beauty and fragrance."

That this collection was indeed a scientific treasure house is borne out by such tributes as that of Sir Joseph Banks:

"At an expense seldom undertaken by an individual he procured from all parts of the world a great number of the rarest plants, and protected them in the amplest buildings which this or any other country has seen. In my opinion no other garden in Europe, royal or of a subject, had nearly so many scarce and valuable plants." Perhaps, after all it is just as well that Dr. Fothergill's name, though scarcely euphonious, should be perpetuated by so lovely a flowering shrub. In so using it we shall be carrying out one of his own precepts. "Let us", he wrote, "preserve the memory of the deserving: perhaps it may prompt others likewise to deserve."

EDGAR ANDERSON

W. H. JUDD

EXPLANATION OF PLATES

Page 62. Dr. John Fothergill

(*From an old engraving.*)

Insert. *Fothergilla major*

(*Drawing by Blanche Ames Ames.*)

FOTHERGILLA *major*



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